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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,567	10/31/2003	Surya Varanasi	112-0134US	1584

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EXAMINER	
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,567	VARANASI ET AL.	
	Examiner	Art Unit	
	Chandrahas Patel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-105* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-105* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 May 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/20/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 2, 212, 214, 222, 224, 232, 234, 236, 238. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 6, 9, 12-23, 26, 29, 32-43, 46, 49, 51-63, 66, 69, 71-83, 86, 89, 92-105 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (USPN 7,203,762).

Regarding claim 1, Yamada teaches a method of routing a flow of frames **[Abstract]** comprising: applying a correspondence between at least some logical ports and physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; and balancing frame traffic through the switch **[Fig. 14, S21]**, the frame traffic including frames exiting the switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claims 2, 14, 16, 22, 34, 42, 54, 56, 62, 74, 76, 82, 94, 96, Yamada teaches physical port for each of the frames exiting the switch is selected based on the correspondence between logical and physical port **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claims 3, 23, 43, 63, 83, 102, Yamada teaches balancing the frame traffic over a set of links coupling the switch to other devices **[Fig. 12, Col. 5, lines 9-16]**.

Regarding claims 6, 9, 26, 29, 46, 49, 66, 69, 86, 89, 103, 104, Yamada teaches balancing comprises applying a pseudo-random process to select a particular port as an egress port, a particular port being selected from available logical ports, and the particular port is being selected for a particular frame exiting switch **[Col. 11, lines 9-20]**.

Regarding claims 12, 15, 32, 35, 52, 55, 72, 75, 92, 95, 105, Yamada teaches applying weights to select a particular port of the switch as an egress port for a particular frame exiting the switch, particular port being selected from the available logical ports of switch **[Col. 5, lines 9-15, service-dependent forwarding applies weights to paths where a path will be selected by a specific port]**.

Regarding claim 13, 33, 36, 51, 53, 71, 73, 93, Yamada teaches correspondence is employed to determine the physical port to which to route particular frame based on the logical port selected as a particular port **[Col. 11, lines 13-20]**.

Regarding claims 17, 19, 37, 39, 57, 59, 77, 79, 97, 99, Yamada teaches a selected physical port is selected based on a source tag and/or a destination tag **[Col. 9, lines 21-25]** added to the frame after the frame enters switch **[Fig. 8, S8]**.

Regarding claims 18, 20, 38, 40, 58, 60, 78, 80, 98, 100, Yamada teaches source tag and/or destination tag is stripped off before the frame exits the switch **[Fig. 9, S12]**.

Regarding claim 21, Yamada teaches an apparatus **[Fig. 7, 20]** comprising: a switch **[Fig. 7, 20]** including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]**; the switch further including logical and physical ports, and having the capability to route a flow of frames exiting the switch **[Fig. 6, Virtual sending port and MPLS-side physical port]**; the switch is configured to apply a

correspondence between at least some logical ports and physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; and balance frame traffic through the switch **[Fig. 14, S21]**, the frame traffic including frames exiting the switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claim 41, Yamada teaches a switch fabric **[Fig. 7]** comprising: at least a first switch **[Fig. 7, 10]** and a second switch **[Fig. 7, 20]**; the first switch including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]**; the first switch further including logical and physical ports, and having the capability to route a flow of frames exiting the first switch **[Fig. 6, Virtual sending port and MPLS-side physical port]**; the first switch is configured to apply a correspondence between at least some logical ports and physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; and balance frame traffic through the first switch **[Fig. 14, S21]**, the frame traffic including frames exiting the first switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the first switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claim 61, Yamada teaches a network **[Fig. 27]** comprising: a host **[Fig. 27, 41]**; a physical storage unit **[Fig. 27, 41, 41 is a desktop computer which has physical storage]**; a first switch **[Fig. 7, 10]** and a second switch **[Fig. 7, 20]** communicatively coupled to form a switch fabric **[Fig. 27, 401 and 402 are switches described in more detail in Fig. 7]**; the

first switch and second switch further communicatively coupled to the host and physical storage unit **[Fig. 27, 401 and 402 are coupled to 41]**; the first switch including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]** and further including logical and physical ports **[Fig. 6, Virtual sending port and MPLS-side physical port]**; the first switch is configured to apply a correspondence between at least some logical ports and physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; and balance frame traffic through the first switch **[Fig. 14, S21]**, the frame traffic including frames exiting the first switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the first switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claim 81, Yamada teaches an article comprising: a storage medium having stored thereon instructions, that when executed, result in performance of a method of routing a flow of frames **[Col. 7, lines 33-36]** comprising: applying a correspondence between at least some logical ports and physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; balancing frame traffic through the switch **[Fig. 14, S21]**, the frame traffic including frames exiting the switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claim 101, Yamada teaches an article comprising: a storage medium having stored thereon instructions, that when executed, result in performance of a method of initializing

a switch to route a flow of frames **[Col. 7, lines 33-39]** comprising: initializing a correspondence between at least some logical ports and physical ports of the switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; and further initializing the switch to balance frame traffic through the switch **[Fig. 14, S21]**, the frame traffic including frames exiting the switch via physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4, 24, 44, 64, 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (USPN 7,203,762) in view of (Munter USPN 7,209,659).

Regarding claims 4, 24, 44, 64, 84, Yamada teaches a method, an apparatus, a switch fabric, a network, an article as discussed in rejection of claims 3, 23, 43, 63, and 83 respectively.

However, Yamada does not teach four links comprise a trunked group.

Munter teaches four links comprise a trunked group **[Col. 4, lines 1-4]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have four links comprise a trunked group since its well-known in the art that multiple connections form a trunked group.

7. Claims 5, 7, 8, 10, 11, 25, 27, 28, 30, 31, 45, 47, 48, 50, 65, 67, 68, 70, 85, 87, 88, 90, 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (USPN 7,203,762) in view of Battle et al. (USPN 7,088,713).

Regarding claims 5, 25, 45, 65, 85, Yamada teaches a method, an apparatus, a switch fabric, a network, an article as discussed in rejection of claims 3, 23, 43, 63, and 83 respectively.

However, Yamada does not teach eight links comprise a trunked group.

Battle teaches eight links comprise a trunked group **[Col. 6, lines 2-3]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have eight links comprise a trunked group since its well-known in the art that multiple connections form a trunked group.

Regarding claims 7, 10, 27, 30, 47, 50, 67, 70, 87, 90, Yamada teaches a method, an apparatus, a switch, fabric, a network as discussed in rejection of claims 6, 9, 26, 29, 46, 49, 66, 69, 86, and 89 respectively.

However, Yamada does not teach applying a hash function when selecting ports.

Battle teaches applying a hash function when selecting ports **[Col. 6, lines 10-20]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a hash function when selecting ports so that trunk can be selected based destination address and source address **[Col. 6, lines 10-20]**.

Regarding claims 8, 11, 28, 31, 48, 68, 88, 91, Yamada further teaches correspondence is employed to determine the physical port to which to route particular frame based at least in part on the logical port selected as particular port **[Col. 11, lines 13-20]**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is 571-270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CBP

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER